# ORDER FOR SUPPLIES OR SERVICES

| 1. CONTRACT/PURCH. ORDER/ AGREEMENT NO. | 2. DELIVERY ORDER/ CALL NO. | 3. DATE OF ORDER/CALL (YYYYMMDD) | 4. REQ./ PURCH. REQUEST NO. | 5. PRIORITY |
|---|---|---|---|---|
| N652361890001 | N652362091001 | 2019 Nov 15 | 1300819135 | |

**6. ISSUED BY**   CODE  N65236

US NAVY NIWC ATLANTIC CHARLESTON
PO BOX 190022  2.0 CONTRACTS
843-218-5982
LISA.ROSENBAUM@NAVY.MIL
NORTH CHARLESTON SC 29419-9022

**7. ADMINISTERED BY** *(if other than 6)*   CODE  S1103A

DCMA ATLANTA
2300 LAKE PARK DRIVE
STE 300
SMYRNA GA 30080

**8. DELIVERY FOB**

[X] DESTINATION

[ ] OTHER

(See Schedule if other)

**9. CONTRACTOR**   CODE  1G3V8     FACILITY

**NAME AND ADDRESS**
ADVANCED TECHNOLOGY INTERNATIONAL
GOVERNMENT REPRESENTATIVE
ON BEHALF OF THE IWRP CONSORTIUM
315 SIGMA DRIVE
SUMMERVILLE SC 29486

**10. DELIVER TO FOB POINT BY (Date)** *(YYYYMMDD)*
SEE SCHEDULE

**11. MARK IF BUSINESS IS**
[ ] SMALL
[ ] SMALL DISADVANTAGED
[ ] WOMEN-OWNED

**12. DISCOUNT TERMS**

**13. MAIL INVOICES TO THE ADDRESS IN BLOCK**
See Item 15

**14. SHIP TO**   CODE

**SEE SCHEDULE**

**15. PAYMENT WILL BE MADE BY**   CODE  HQ0338

DFAS COLUMBUS CENTER
DFAS-CO/SOUTH ENTITLEMENT OPS P.O. BOX 182264
COLUMBUS OH 43218-2264

**MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.**

**16. TYPE OF ORDER**

DELIVERY/CALL  [X]  This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.

PURCHASE  Reference your quote dated
Furnish the following on terms specified herein. REF:

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

| NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED (YYYYMMDD) |
|---|---|---|---|

[ ] If this box is marked, supplier must sign Acceptance and return the following number of copies:

**17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE**

See Schedule

| 18. ITEM NO. | 19. SCHEDULE OF SUPPLIES/ SERVICES | 20. QUANTITY ORDERED/ ACCEPTED* | 21. UNIT | 22. UNIT PRICE | 23. AMOUNT |
|---|---|---|---|---|---|
| | **SEE SCHEDULE** | | | | |

\* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
TEL: 843-218-5982
EMAIL: lisa.rosenbaum@navy.mil
BY: LISA ROSENBAUM

(b)(6)

CONTRACTING / ORDERING OFFICER

| 25. TOTAL | $408,941.00 |
|---|---|
| 26. DIFFERENCES | |

**27a. QUANTITY IN COLUMN 20 HAS BEEN**

[ ] INSPECTED  [ ] RECEIVED  [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

c. DATE (YYYYMMDD)

d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE

| 28. SHIP NO. | 29. DO VOUCHER NO. | 30. INITIALS |
|---|---|---|
| [ ] PARTIAL [ ] FINAL | 32. PAID BY | 33. AMOUNT VERIFIED CORRECT FOR |

f. TELEPHONE NUMBER      g. E-MAIL ADDRESS

**36. I certify this account is correct and proper for payment.**

a. DATE (YYYYMMDD)

b. SIGNATURE AND TITLE OF CERTIFYING OFFICER

| 31. PAYMENT | 34. CHECK NUMBER |
|---|---|
| [ ] COMPLETE [ ] PARTIAL [ ] FINAL | 35. BILL OF LADING NO. |

| 37. RECEIVED AT | 38. RECEIVED BY | 39. DATE RECEIVED (YYYYMMDD) | 40. TOTAL CONTAINERS | 41. S/R ACCOUNT NO. | 42. S/R VOUCHER NO. |
|---|---|---|---|---|---|

**DD Form 1155, DEC 2001**          PREVIOUS EDITION IS OBSOLETE.

Section A - Solicitation/Contract Form

This order is issued under and pursuant to the provisions of N652361890001 (the "Agreement"). The terms and conditions of the Agreement are hereby incorporated by reference and, except as provided herein by this order, remain in full force and effect.

Section B - Supplies or Services and Prices

| ITEM NO<br>0001 | SUPPLIES/SERVICES | QUANTITY<br>1 | UNIT<br>Job | UNIT PRICE<br>$408,941.00 | AMOUNT<br>$408,941.00 |
|---|---|---|---|---|---|

IWRP PROTOTYPE PROJECT 19-LANT-0073FFP
ONI Repository of Characterized Adversaries (ORCA): [(b)(4)]
[         ] of this CLIN reflects the
Fixed Management Rate, payable to ATI in accordance with the "ATI Admin
Rate" column of the Milestone Schedule/Payment table in Section 6 of the
Statement of Work.FOB: Destination
PSC CD: AD26

|  |  |  | NET AMT | $408,941.00 |
|---|---|---|---|---|

| ITEM NO<br>000101 | SUPPLIES/SERVICES | QUANTITY | UNIT | UNIT PRICE | AMOUNT<br>$0.00 |
|---|---|---|---|---|---|

Funding OnlyFFP
This SCLIN is for Funding Purposes Only.VENDOR PART NR: SEE IWRP
INTAKE FORM
PURCHASE REQUEST NUMBER: 1300819135

|  |  | NET AMT | $0.00 |
|---|---|---|---|

ACRN AA  CIN: 130081913500001                          [(b)(4)]

| ITEM NO | SUPPLIES/SERVICES | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------|-------------------|----------|------|------------|--------|
| 000102  |                   |          |      |            | $0.00  |

Funding OnlyFFP
This SCLIN is for Funding Purposes Only.VENDOR PART NR: SEE IWRP
INTAKE FORM
PURCHASE REQUEST NUMBER: 1300819135

NET AMT $0.00

ACRN AB  CIN: 130081913500002 (b)(4)

| ITEM NO | SUPPLIES/SERVICES | QUANTITY | UNIT | UNIT PRICE | AMOUNT |
|---------|-------------------|----------|------|------------|--------|
| 0002 OPTION |               | 1        | Job  | $334,589.00 | $334,589.00 |

IWRP PROTOTYPE PROJECT 19-LANT-0073FFP
ONI ORCA Phase IV: (b)(4)
column of the Milestone
Schedule/Payment table in Section 6 of the Statement of Work.FOB: Destination
PSC CD: AD26

NET AMT $334,589.00

Section C - Descriptions and Specifications

19 LANT 0073

## STATEMENT OF WORK

### Submitted under Request for Prototype Proposal (RPP) IWRP-19-LANT-0073

### For

### Other Transaction Agreement # N65236-18-9-0001

**Proposal number:**  19-LANT-0073-001

**Organization:**  (b)(4)

**Title:**  ONI Repository of Characterized Adversaries (ORCA)

**Place of Performance:**  Approved Contractor Facility

**Period of Performance:**  Upon award In Accordance with Section 6

## 1.0  Introduction/Background:

In any mode in which a threat, and the weapons and sensors comprising it might operate, comprehensive and dynamic Office of Naval Intelligence (ONI) Characteristics and Performance (C&P) Intelligence including Intelligence Mission Data (IMD), will define threat capabilities and signature vulnerabilities for every joint or naval platform that might observe that threat from above, below, or through the waterline.

For nearly half a century ONI has produced platform, weapon and sensor-enabling Characteristics and Performance (C&P) data supporting Navy acquisition programs of record throughout their development and operational lifecycle.  To ensure ONI IMD Services and data can be readily and reliably consumed by the builders and crews of platform, weapon, and sensor systems of supported military forces, ONI is modernizing its capacity to produce a high volume of rich, dynamic and live threat characterizations under an Engineering Level Characterizations of the Adversary (ELCA) program.  Under the ELCA Program, the objective will be realized in the ONI Repository for Characterizations of the Adversary (ORCA).

## 2.0  Scope/Initiative Objective:

This project will deliver a new commercial-cloud service (C2S)-homed intelligence service capability aligned with objectives of the Defense Intelligence Agency (DIA)'s Machine-Assisted Analytic Rapid-Repository System (MARS) by providing ONI a modernized IMD production capacity in a few short years. In four incrementally approved phases, leveraging commercial best practices and an Agile software development approach, ONI will modernize its IMD production ecosystem into a family of light-weight, Object-Based Production (OBP)-enabled micro-services hosted in an ONI-brokered Virtual Private Cloud (VPC).  Contextualized to Navy and IC data models, warfighters will have unprecedented direct access to a live pool of coalesced ONI IMD they can use to compose platform and sub-system-specific analysis and operations, and enable IMD on-the-fly.

Informed by a corps of ONI analysts using modernized web tools and services to generate new IMD, the Farragut Technical Analysis Center (TAC) will extend and scale its IMD production ecosystem with intelligence data and analytic apps and services to meet intelligence collector, producer and consumer demands.  We envision threat objects describing platforms and the subsystems comprising them hosted in the cloud, where a library (store) of applications are also hosted that provide required capability to collectors, intelligence producers and consumers.

Following a successful Acceptance Event for Phase I and Phase II; using representative surrogate data in an UNCLASSIFIED development environment for Phase III, the developer will provide a containerized prototype via the Defense Intelligence Information Enterprise (DI2E) that can be tested in the ONI Testing Virtual Private Cloud

(VPC). In a follow-on implementation Phase IV, the developer will provide a prototype demonstrates operability using CLASSIFIED (SECRET) data on the Testing VPC as well. The ONI VPC's are as follows;

ONI Virtual Private Cloud (VPC)s:
   a. Development
   b. Testing
   c. Staging
   d. Production
   e. Management

While a Top Secret Security Clearance isn't necessary for the first 3 phases with UNCLASSIFED data; the developer will have to provide the information required to introduce and deploy their unclassified software to the classified VPC at ONI. The developer will also have to assist in the deployment of their prototype in ONI's VPC as part of acceptance criteria in Phase III and Phase IV. If a Phase IV is conducted, the developer an ONI would decide whether the prototype would be delivered with classified content; or delivered as unclassified code where the classified data would be reloaded inside the CLASSIFIED VPC once the code is deployed after completing Configuration Management (CM) at ONI.

The project includes development in two areas to achieve the most comprehensive and effective result:

1) **Lead Cloud System Integration (LCSI) Prototyping Task:**
   a. PROTOTYPE VISION: To prototype a capability that demonstrates how disparate static data stores might be replaced with modern, app-store like microservices that are used to create, validate, and consume intelligence cast as standardized, extensible Mark-up Language (XML) Models replicated in region, and platform-oriented shards/replicas (horizontal partitions of data) around the globe; a Lead System Integrator will develop a prototype Software Development Kit (SDK) that other developers can use as a guide to develop apps and services shared across the intelligence, warfighting, and intelligence communities accessing data in an ONI brokered C2S. The LCSI prototype shall also demonstrate how local, regional, and national (the ONI node) will self-synchronize content in both a traditionally connected, cloud-homed, or hybrid environment.
   b. INITIAL PROTOTYPE: The initial prototype will be executed in Four Phases as follows:
      i. Phase I - Establish a Development Schedule and Plan
      ii. Phase II - Develop a System Design and ONI Information Assurance (IA) Brief
      iii. Phase III - Demonstrate ability to deliver a copy of an UNCLASSIFIED Surrogate Database (informed by the NID artifacts provided as GFI) along with micro-services that interact with the content, hosted in ONI's Virtual Private Cloud (VPC).
      iv. Phase IV - Demonstrate ability to deliver a Prototype along with micro-services that interact with SECRET Naval Intelligence Data content when deployed and populated with classified data in ONI's Virtual Private Cloud (VPC).
   Each Phase will be gated by an Acceptance Event.

2) **Data and Analytic App and Micro-Services Development Task:**
   a. LONG TERM: Developers will create prototype apps that leverage an existing threat object service layer application program interface (API), or they may modify the service layer to deliver new warfighter capabilities IAW section 4.1 of this SOW. These prototypes will demonstrate how acquisition program managers might develop apps to with or without an SDK (task will specify) to leverage all or part of the data comprising one or more subcomponents (data objects) comprising a platform to meet a new, warfighting need. Specifically, for a fielded library of XML ORCA content, a family of apps might be developed to compare weapons yield, range, or accuracy; while another family of apps or micro-services might be developed to afford subject matter experts and collector's access and rights to create, edit, or validate intelligence content.
   b. INITIAL PROTOTYPE: The initial prototype will be executed in Four Phases as follows:
      i. Phase I - Establish a Development Schedule and Plan
      ii. Phase II - Develop a System Design and ONI Information Assurance (IA) Brief

iii. Phase III - Demonstrate ability to create a micro-service that can create a set of MEPED threat object content (section 4.1.7.3) connecting directly to the UNCLASSSIFED VPC database Instance.

iv. Phase IV - Demonstrate ability to deliver prototype micro-services that interact with SECRET Naval Intelligence Data content when deployed with classified data in ONI's Virtual Private Cloud (VPC).

Each Phase will be closed by an Acceptance Event Milestone

Offeror responses will address both tasks; multiple awards may be made.

## 3.0 References/Specifications/Government Furnished Information (GFI):

| | Document Number / Title |
|---|---|
| 3.1.1 | Current Oracle-based NID Threat Model Tables |
| 3.1.2 | Electronic Warfare Intelligence Reprogrammable (EWIR) Database (EWIRDB) Structure |
| 3.1.3 | Anti-Submarine Warfare (ASW) Community of Interest (COI) Data Model (ACDM) |
| 3.1.4 | Navy Enterprise Data Model SPAWAR DIV-01/02 |
| 3.1.5 | Military Equipment Parametrics and Engineering Database (MEPED) Data Elements and Data Dictionaries |
| 3.1.6 | ONI NID Database Entity Relationship Diagrams |
| 3.1.7 | Acoustic Data eXchange Format (ADXF) Description |
| 3.1.8 | Farragut DEVSECOPS Overview |
| 3.1.9 | ONI IA Brief Template.pptx |
| 3.1.10 | ONI NAVINTEL IA Registration Brief Guide v2.0 Final.pdf |
| 3.1.11 | SECRET MEPED Object Content[1] |
| 3.1.12 | SECRET NID Database Content[1] |

*Ref, Spec, GFI Note 1 - Classified GFI will be provided within 10 days of the start of Phase IV*

## 4.0 Requirements:

The Government prototype software capability that demonstrates how ONI might transform its Naval Intelligence Database (NID) from a static Oracle Database structure hosted on premise at ONI, into a new data service hosted in an ONI brokered Cloud. A Commercial Cloud Services (C2S)-enabled ORCA must accommodate extensible markup language (XML) intelligence threat object content interactions by: (1) Intelligence, Surveillance & Reconnaissance (ISR) collectors; (2) Intelligence Producers, and; (3) Tactical Consumers (Platforms, Weapon, and Sensor) at multiple security levels, all the time, and expose that content to other consumers at the rate of change. When variance between master and remote model content is sensed, the model must be self-synchronizing with instances hosted on same, higher and lower security enclaves connected via an in-line rules-based cross domain solution, and using file exchanges across an air-gap for not connected networks such as Defense Research Engineering Network (DREN)/Secret Defense Research Engineering Network (SDREN).

Ideally the prototype concepts will describe a path a LCSI will use to move ONI's C&P data to a cloud-homed ELCA Repository comprising thousands of threat objects humans and systems conduct transactions with all the time, and will describe how that cost might scale if fully productionized in an operational network environment.

Cost must be fully described and associated with all software associated with development, testing, and operating the ORCA microservice and Threat Object\Models storage environment. Cost projections shall

include a National Node; 6 regional; 50 Operational (MOC/TOC, Task Force, and Mission) and 500 platform nodes for 10 years.

Proposals should conceptualize a path from static content generalized in the Current Oracle-based NID Threat Model Tables (3.1.1) to the desired end-state real-time or near real-time against concepts described in the high-level architecture described in the Navy Enterprise Data Model SPAWAR DIV-01/02 (3.1.4), and the more discrete details in reference ACDM (3.1.3), and EWIRDB (3.1.2).

Under an Object Based Production (OBP) approach, micro-services (apps) would be developed to an LCSI validation, certification and library management process. This process will be used to vet micro-services designed to leverage a threat model service layer interface boundary that connects apps and micro-services the LCSI and others develop, with specific physical database\model (XML, DLL, et al) content. The XML models will contain unvalidated and authoritative content validated by ONI that can be searched, coalesced and viewed. Users subscribe to content they define (*e.g.*, just aircraft and just electronic warfare (EW) content) and receive notifications or exchange data at specified rates when specified content are created, changed, or modified or when they manually pull it. Significant integrated physical model instances (an XML file representing a specific class of submarine) might be created in MATLAB; however, Next Generation Threat Simulation (NGTS) and other analytic and visualization micro services, and analysts must also be able to interact with the same physical model content. Specifically, via an ELCA Characteristics and Performance (C&P) and Signatures OMI analysts might change more simple properties such as contact speed, weight, or length; where via an Intelligence Mission Data (IMD) Builder, a re-programmer might shape model content so it can enable a specific data-driven tactical system.

**4.1** Technical Requirements:

Lead System Integrator Task: The Lead Cloud System Integrator (LCSI) task requires a plan, design, and implementation that in Phase III demonstrates the ability host UNCLASSIFED surrogate data representing Naval Intelligence Database (NID) content in ONI's Development and Testing Virtual Private Cloud (VPC) and to interact with it there with new micro-services described in this section of the SOW. In that VPC the developer will describe an approach and implementation to connect new micro-services to the ONI NID content in the VPC (Oracle-based NID Threat Model Tables (13.1.1)). The developer will also describe how they as an LCSI would establish an ORCA Micro-service Library Vetting (validation and certification, hosting, and dissemination management) process to host a permanent library IAW the ONI Risk Management Framework (RMF).

Fleet collectors, Intelligence Producers at ONI, and Intelligence consuming operators and systems require downloadable micro-services or apps that provide the following high-level functionality (details provided during follow-on negotiation):

- **4.1.1** Alert a Subscribed User/Community of Interest (COI)
  - **4.1.1.1** Alert an IMD Machine User about New Data
  - **4.1.1.2** Alert and Direct a Human subscriber to new or changed information
- **4.1.2** Characterize a Platform
  - **4.1.2.1** Define operating postures (fast, slow, shallow deep, patrol, transit)
    - **4.1.2.1.1** Define operating modes for platforms (battery, Diesel engine)
  - **4.1.2.2** Define threat behaviors
    - **4.1.2.2.1** Associate behaviors and Tactics, Techniques, and procedures to platform or subsystem
  - **4.1.2.3** Attribute subordination for order of battle (country, ocean, fleet, base, flotilla, squadron, etc.)
  - **4.1.2.4** Attribute acquisition lifecycle
    - **4.1.2.4.1** Attribute construction timelines
    - **4.1.2.4.2** Establish lifecycle milestones (keel laid, entered service, dismantled, etc.)

**4.1.2.4.3** Attribute milestones and states to platforms

**4.1.2.5** Attribute operational lifecycle

**4.1.2.5.1** Establish lifecycle milestones

**4.1.2.5.2** Attribute milestones and states to platforms

**4.1.2.5.3** Attribute readiness (combat, patrol)

**4.1.3** Characterize Equipment

**4.1.3.1** Associate Equipment to a Platform

**4.1.3.2** Associate signatures to equipment

**4.1.3.2.1** Associate observations (Collectors/Other Sources)

**4.1.3.2.2** Attribute Estimates (Intel Producer)

**4.1.3.2.3** Correlate Measurements (Intel Producer)

**4.1.3.2.4** Attribute projections (Intel Producer)

**4.1.3.3** Characterize Subsystems

**4.1.3.3.1** Characterize Hull, Mechanical, Electrical and Electronic Equipment

**4.1.3.4** Define operating modes for equipment

**4.1.3.4.1** Define operating states for equipment

**4.1.3.4.2** Associate behaviors to equipment

**4.1.4** Describe Geo Features

**4.1.4.1** Operating Areas (airspace or ocean boxes)

**4.1.5** Describe METOC Features (fronts, eddies, currents)

**4.1.6** Define a Data Model-based Platform Profile

**4.1.7** Define Service Layer Functions

**4.1.7.1** Automatically Produce US Only and Foreign Releasable Outputs

**4.1.7.2** API's - Define interface and attributes for:

**4.1.7.2.1** Human Service Components (Search, Bookmark, subscribe, etc.)

**4.1.7.2.2** Tactical Machine Consumer Support
- Coalesce threat object as IMD

**4.1.7.2.3** Simulation Support (NGTS, ITASE, etc)

**4.1.7.2.4** Acquisition Program Support
- Coalesce Legacy Threat Platform Object Model (aircraft, sub, surface ship, weapon)

**4.1.7.3** Create Static Outputs

**4.1.7.3.1** EWIR

**4.1.7.3.2** MEPED

**4.1.7.3.3** MARS

**4.1.8** Establish Predefined Filtering criteria for Multi-Security Level, Custom Threat Objects:

**4.1.8.1.1** Above water

**4.1.8.1.2** Through water

**4.1.8.1.3** Under water

**4.1.8.1.4** Composite

**4.1.9** Support the Application of Standards

**4.1.9.1** Automatically Apply Standards

**4.1.9.2** Support Custom Product Creation

**4.1.9.2.1**     Create aggregate classification for specific associations

**4.1.9.2.2**     Allow Anonymization of Sources and Method

**4.1.9.3**    Allow Attribute-Level Security Marking

**4.1.9.3.1**     Mark security class to individual attribute

**4.1.9.3.2**     Mark security class to record or row

**4.1.9.4**    Automatically Assess and Identify Potential Security Violations

**4.1.9.5**    Support Standard Products

**4.1.9.5.1**     Style Guides

**4.1.9.5.2**     DOD and IC Policy

**4.1.10**    Support Data Entry, Editing, and Updating

**4.1.10.1**    Automatic/Directed Ingest

**4.1.10.1.1**     Leverage\Ingest Upstream Products

**4.1.10.1.2**     Ingest External Information

**4.1.10.2**    Correlate (create links to) External Information

**4.1.10.3**    Manually Enter Data

**4.1.11**    SIMULATION/STIMULATION Readiness

**4.1.11.1**    Support the Composition of Scenarios for:

**4.1.11.1.1**     Acquisition

**4.1.11.1.2**     Disruptive Activities

**4.1.11.1.3**     Warfighting

**4.1.11.2**    Create a Sequence of Operating States for Platforms and equipment comprising them

**4.1.11.2.1**     Platforms

**4.1.11.2.2**     Weapons

**4.1.11.2.3**     Fleets

**4.1.11.2.4**     Navies

**4.1.11.2.5**     Countries

**4.1.12**    Update or Extend the Data Model

**4.1.13**    Usability and Human Factors

**4.1.13.1**    Support Consumer Oriented User eXperience (UX) Composition

**4.1.13.2**    Edit and Update Information

**4.1.13.3**    Conduct Reviews

**4.1.13.3.1**     For Release

**4.1.13.3.2**     For Accuracy

**4.1.13.3.3**     To Validate

**4.1.13.3.4**     To Evaluate Usefulness

**4.1.13.4**    Apply Commercial Off-the-Shelf (COTS) Style Guides

**4.2**    Testing Requirements:

**4.2.1.1.1**     *e.g.*, Farragut DEVSECOPS Overview

**4.3**    Logistical Requirements:

**4.3.1**    None

**4.4**    Other Requirements:

**4.4.1**    None

**5.0 Deliverables:**

The Government will own the ORCA repository and its content. While tools and software and databases (Oracle, MongoDB, Postgres, et al) may be used in the implementation to create or interact with ORCA content; ORCA content and the models it creates shall:

- Be wholly government owned
- Contain non-proprietary content
- Be extractable in a government approved persistent state (XML model) that can be created at any time
- Be non-reliant on third party actions, code or licenses to leverage content at the tactical platform, weapon, or sensor level

Any Micro-service or Service Integration Prototype and API implementation delivered to the Government in Phase III or Phase IV and beyond, shall:

**5.1** Include all software source code comprising the prototype

**5.2** Include all ancillary configuration/build scripts and utilities needed to compile the source code into an executable prototype. All test cases, inputs and expected outputs required to verify that the prototype functions as designed

**5.3** Include all ancillary configuration/build scripts and utilities needed to execute the test cases.

**5.4** Include a basic library description and About/User Guide describing app functionality and features.

**5.5** The design documentation may include Representational State Transfer (REST)/API calls, test cases, and pseudocode as well as block diagrams, Unified Modeling Language (UML) or other design artifacts as the agreement holder sees fit to describe the planned implementation and its access to and utilization of data model outputs and characterizations IAW the ONI RMF process.

The data rights required for this prototype are at minimum Government Purpose Rights. If the prototype is implemented by extending open-source technologies, and if the agreement holder desires, the government will consider allowing software created under this prototype to be submitted back to open-source software repository maintainers for their potential integration into the open-source baseline, based on the government's sole discretion and public release approval process.

|  |  | **Deliverable** | **Task Reference** | **Data Rights** |
|---|---|---|---|---|
| 5.1 | | Technical Study Analysis Report | | GPR |
| 5.2 | | Design documentation including REST calls, test cases, and pseudocode as well as block diagrams, UML or other design artifacts to describe the planned implementation and its access to and utilization of data model outputs and characterizations. | | GPR |
| 5.3 | | All ancillary configuration / build scripts and utilities needed to compile the source code into an executable prototype. | | GPR |
| 5.4 | | Software components and source code comprising the prototype | Section 4.1 | GPR |
| 5.5 | | Prototype (2 units) | | GPR |
| 5.6 | | Final Prototype (2 units) | | GPR |
| 5.7 | | All test cases, inputs and expected outputs required to verify that the prototype functions as designed (Test Results and Analysis) | | GPR |
| 5.8 | | A basic library description and About/User Guide describing app functionality and features | | GPR |

| 5.9 | Weekly Progress Reports | | |
|---|---|---|---|
| 5.10 | Quarterly Technical and Business Status Reports | 8.1 | |
| 5.12 | Final Technical and Business Status Report | 8.2, 8.3 | |

## 6.0 Milestone Payment Schedule:

As described in Section 4.0 proposals should conceptualize a path from static content generalized in the Current Oracle-based NID Threat Model Tables (3.1.1) to the desired end-state against concepts described in the high-level architecture described in the Navy Enterprise Data Model SPAWAR DIV-01/02 (3.1.4), and the more discrete details in reference ACDM (3.1.3), and EWIRDB (3.1.2).

| | Milestone / Deliverable | Due Date | Member Cost | ATI Admin Rate | Total Milestone Cost |
|---|---|---|---|---|---|
| **LCSIP Prototype** | | | | | |
| | ATI Admin Rate for M/S 0 - Base | Upon Award | (b)(4) | | |
| | Award Date (*estimated) | *10/28/2019 | $0 | *$0* | *$0* |
| 6.1 | Lead Cloud System Integration Prototype (LCSIP) | 210 days | $0 | *$0* | *$0* |
| **Base: Phase I LCSIP Prototype** | | | | | |
| 6.1.1 | [Phase I] Post-Award Kickoff brief & action items list for LCSIP Plan | Award + 30 days | (b)(4) | | |
| | Phase I Government Acceptance Event | 21 Calendar Days | $0 | *$0* | *$0* |
| **Base: Phase II LCSIP Prototype** | | | | | |
| 6.1.2 | [Phase II] Integration Prototyping Whitepaper that includes a   proposed approach, SDK and API Baseline Design and scalable integration plan from prototypes with the potential to full Productionization | Phase I Acceptance + 60 days | (b)(4) | | |
| | Phase II Government Acceptance Event | 21 Calendar Days | $0 | *$0* | *$0* |
| **Base: Phase III LCSIP Prototype** | | | | | |
| 6.1.3 | Quarterly Technical and Business Status Report | 1/15/2020 | $0 | *$0* | *$0* |
| 6.1.4 | [Phase III] Initial UNCLASSIFIED Prototype Data Model and API Implementation, and SDK Development Task | Phase II Acceptance + 60 days | (b)(4) | | |
| | Phase III Government Acceptance Event | 21 Calendar Days | $0 | *$0* | *$0* |
| 6.1.5 | Final Technical and Business Status Report (All Phases) | End of PoP | (b)(4) | | |
| | *Base Phases I - III LCSIP Subtotal* | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Option: Phase IV LCSIP Prototype** | | | | | |
| | ATI Admin Rate for M/S 0 - Option | Upon Option Exercise | (b)(4) | | |
| 6.1.6 | [Phase IV] Initial CLASSIFIED (SECRET) Prototype Data Model and API Implementation, and SDK Development Task (Optional) | Phase III Acceptance + 60 days | | | |
| | Phase IV Government Acceptance Event | 21 Calendar Days | $0 | *$0* | *$0* |
| | *Option Phase IV LCSIP Subtotal* | | (b)(4) | | |
| | **Phases I – IV LCSIP Grand Total** | | | | |
| | | | | | |
| | ATI Admin Rate for M/S 0 - Base | Upon Award | (b)(4) | | |
| 6.2 | Data and Analytic App and Micro-Service Development | 200 days | | | |
| **Base: Phase I ORCA Micro-Service Plan** | | | | | |
| 6.2.1 | [Phase I] Post-Award Kickoff brief & action items list (ORCA Micro-Service Plan) | Award + 20 days | (b)(4) | | |
| | Phase I Government Acceptance Event | 21 Calendar Days | | | |
| **Base: Phase II ORCA Micro-Service Plan** | | | | | |
| 6.2.2 | Phase II] Integration Prototyping Whitepaper that includes a proposed ORCA Micro-Service Design that will be demonstrated with Surrogate Data with the potential to full Productionization (estimated level of effort to adapt to final API implementation based on GFI). | Phase I Acceptance + 40 days | (b)(4) | | |
| | Phase II Government Acceptance Event | 21 Calendar Days | $0 | *$0* | *$0* |
| **Base: Phase III ORCA Micro-Service Plan** | | | | | |
| 6.2.3 | [Phase III] Initial UNCLASSIFIED Prototype Data Model and API Implementation, and SDK Development Task | Phase II Acceptance + 90 days | (b)(4) | | |
| 6.2.3.1 | Quarterly Technical and Business Status Report | 1/15/2020 | | | |
| 6.2.3.2 | Components - GFE | | | | |
| 6.2.3.3 | Software - GFE | | | | |
| 6.2.3.4 | Final Prototype | | | | |

| | | | |
|---|---|---|---|
| | 6.2.3.5 | Test Results and Analysis | | |
| | | Phase III Government Acceptance Event | 21 Calendar Days | |
| | 6.2.4 | Final Technical and Business Status Report (All Phases) | End of PoP | |
| | | *Base Phases I - III ORCA Micro-Service Plan* | | |
| **Option: Phase IV ORCA Micro-Service Plan** | | | | (b)(4) |
| | | ATI Admin Rate for M/S 0 - Option | Upon Option Exercise | |
| | 6.2.5 | [Phase IV] Initial CLASSIFIED (SECRET) Prototype Data Model and API Implementation, and SDK Development Task (Optional) | Phase III Acceptance + 90 days | |
| | | *Option: Phase IV ORCA Micro-Service Plan Subtotal* | | |
| | | Phases I – IV ORCA Micro-Service Plan Grand Total | | |
| **GRAND TOTALS** | | | | |
| | | All Base Phases I - III (Member + ATI Admin) | (b)(4) | (b)(4) |
| | | All Option Phase IV (Member + ATI Admin) | | |
| | | **Grand Total Cost** | | **$743,530** |
| | | **Total Period of Performance** | **8 Months** | |
| | | **Contract Type** | **CPFF** | |

**7.0 Delivery Method:**
Deliverables shall be sent to the following POC:
Receiving Official, (b)(6)

(b)(6)

Washington, DC 20395-5720
Phone: (b)(6)
Email: (b)(6)

**8.0 Data and Reporting:**

**8.1** **Periodic Reports**: The contractor shall prepare a Periodic Report which will include a Technical Status Report and a Business Status Report in accordance with the terms and conditions of the IWRP Base Agreement. For the projects that are 120 days or less, the periodic reports will be replaced by the milestone reports. For any project over 120 days, the periodic reports will be quarterly.

**Final Technical Report:** At the completion of the initiative, the contractor shall submit a Final Technical Report, which will provide a comprehensive, cumulative, and substantive summary of the progress and significant accomplishments achieved during the total period of performance, in accordance with the terms and conditions of the IWRP Base Agreement.

**8.2** **Final Business Status Report:** At the completion of the initiative, the contractor shall submit a

Final Business Status Report, which will provide summarized details of the resource status of the initiative, in accordance with the terms and conditions of the IWRP Base Agreement.

**9.0  Patents, Data Rights and Copyrights:**

The data rights required for this prototype are at minimum Government Purpose Rights. If the prototype is implemented by extending open-source technologies, and if the agreement holder desires, the government will consider allowing software created under this prototype to be submitted back to open-source software repository maintainers for their potential integration into the open-source baseline, based on the government's sole discretion and public release approval process.

**10.0 Classification:**

**10.1**    The security classification level for this effort is **SECRET (only the optional Phase IV).**

**11.0 Government Furnished Property:** N/A

**12.0 Close-Out:** N/A

**13.0 Agreements Officer representative (AOR) Info:**

**13.1    Agreements Officer representative (AOR) Contact Info:**
Full name: (b)(6)
Organization: (b)(6)
Work Mailing Address: (b)(6) , Washington, DC 20395-5720
Email: (b)(6)
Phone: (b)(6)

Section E - Inspection and Acceptance

INSPECTION AND ACCEPTANCE TERMS

Supplies/services will be inspected/accepted at:

| CLIN | INSPECT AT | INSPECT BY | ACCEPT AT | ACCEPT BY |
|------|-----------|-----------|-----------|-----------|
| 0001 | N/A | N/A | N/A | Government |
| 000101 | N/A | N/A | N/A | N/A |
| 000102 | N/A | N/A | N/A | N/A |
| 0002 | N/A | N/A | N/A | Government |

Section F - Deliveries or Performance

## DELIVERY INFORMATION

| CLIN | DELIVERY DATE | QUANTITY | SHIP TO ADDRESS | DODAAC / CAGE |
|------|---------------|----------|-----------------|---------------|
| 0001 | POP 15-NOV-2019 TO 14-JUL-2020 | N/A | N/A FOB:  Destination | |
| 000101 | N/A | N/A | N/A | N/A |
| 000102 | N/A | N/A | N/A | N/A |
| 0002 | N/A | N/A | N/A | N/A |

Section G - Contract Administration Data

## ACCOUNTING AND APPROPRIATION DATA

AA: 1791319 N7VB 255 01500 056521 2D EAABS2
COST CODE: 01520RC35204
AMOUNT: (b)(4)

AB: 1791319 N7VB 255 01500 056521 2D EAAAS2
COST CODE: 01520RC35205
AMOUNT: (b)(4)

| ACRN | CLIN/SLIN | CIN | AMOUNT |
|------|-----------|-----|--------|
| AA | 000101 | 130081913500001 | (b)(4) |
| AB | 000102 | 130081913500002 | |